

What is claimed is:

Sub A1}

1. ~~A thermal management system comprising a heat source having an external surface and a thermal interface which comprises an anisotropic flexible graphite sheet having a planar area greater than the area of the external surface of the heat source, the thermal interface being in operative connection with the heat source.~~

2. The thermal management system of claim 1 wherein the heat source comprises an electronic component.

3. ~~The thermal management system of claim 2 wherein the anisotropic flexible graphite sheet is formed by compressing exfoliated particles of natural graphite.~~

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4. ~~A thermal management system comprising a heat sink which comprises a graphite article shaped so as to provide a heat collection surface and at least one heat dissipation surface, wherein arranging the heat collection surface of the graphite article in operative connection with a heat source causes dissipation of heat from the heat source through the at least one heat dissipation surface of the graphite article~~

4 5. The thermal management system of claim ~~4~~ ³ wherein the at least one heat dissipation surface of the graphite article comprises fins formed at a surface of the graphite article opposite the heat collection surface.

5 6. The thermal management system of claim ~~4~~ ³ wherein the graphite article has structural features comprising cavities therein, holes therethrough or combinations of cavities therein and holes therethrough, the at least one heat dissipation surface of the graphite article comprising surfaces of the structural features.

6 7. The thermal management system of claim ~~4~~ ³ wherein the graphite article comprises compressed particles of exfoliated graphite.

7 8. The thermal management system of claim 7 wherein the graphite article comprises anisotropic flexible sheets of compressed particles of exfoliated graphite laminated into a unitary article.

8 7. The thermal management system of claim 8 wherein the anisotropic flexible sheets of compressed particles of exfoliated graphite are laminated with a pressure sensitive or thermally activated adhesive therebetween.

9 7. 10. The thermal management system of claim 8 wherein the anisotropic flexible sheets of compressed particles of exfoliated graphite have an "a" direction extending parallel to the planar direction of the crystal structure of the graphite, and further wherein the unitary article is formed such that the "a" direction of the anisotropic flexible sheets of compressed particles of exfoliated graphite extends between the heat collection surface and the at least one heat dissipation surface of the graphite article.

10 3. 11. The thermal management system of claim 4 wherein the graphite article comprises high density graphite formed from finely divided carbonaceous particles.

11 10. 12. The thermal management system of claim 11 wherein the carbonaceous particles have a particle size of less than about 100 mesh.

13. The thermal management system of claim 4 which further comprises a thermal interface operatively connected to the heat sink, the thermal interface comprising an anisotropic flexible graphite sheet having two parallel planar surfaces extending in a direction parallel to the planar direction of the crystal structure of the graphite in the sheet.

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14. The thermal management system of claim 13 which further comprises a heat source comprising an electronic component having an external surface, wherein one of the planar surfaces of the thermal interface is in operative connection with the external surface of the heat source and the second of the planar surfaces of the thermal interface is in operative connection with the heat collection surface of the heat sink.

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15. A thermal management system comprising:

- (a) a heat source which comprises an electronic component, the heat source having an external surface;
- (b) a thermal interface comprising an anisotropic flexible graphite sheet having two parallel planar surfaces extending in a direction parallel to the planar direction of the crystal structure of the graphite in the sheet, a first of the planar surfaces of the thermal interface being in operative contact with the external surface of the heat source, wherein the planar area of the first planar surface of the thermal interface is greater than the area of the external surface of the heat source; and
- 10 (c) a heat sink which comprises a graphite article shaped so as to provide a heat collection surface and at least one heat dissipation surface, the heat collection surface of the heat sink being in operative contact with the second of the planar surfaces of the thermal interface.

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16. The thermal management system of claim 15 wherein the at least one heat dissipation surface of the heat sink comprises fins formed at a surface of the graphite article opposite the heat collection surface.

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17. The thermal management system of claim 15 wherein the graphite article has structural features comprising cavities therein, holes therethrough or combinations of cavities therein and holes therethrough, the at least one heat dissipation surface of the heat sink comprising surfaces of the structural features of the graphite article.

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18. The thermal management system of claim 15 wherein the graphite article comprises compressed particles of exfoliated graphite.

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19. The thermal management system of claim 18 wherein the graphite article comprises anisotropic flexible sheets of compressed particles of exfoliated graphite laminated into a unitary article.

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20. The thermal management system of claim 19 wherein the anisotropic flexible sheets of compressed particles of exfoliated graphite have an "a" direction extending parallel to the planar direction of the crystal structure of the graphite, and further wherein the unitary article is formed such that the "a" direction of the anisotropic flexible sheets of compressed particles of exfoliated graphite extends between the heat collection surface and the at least one heat dissipation surface of the graphite article.

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21. The thermal management system of claim 15 wherein the graphite article comprises high density graphite formed from finely divided carbonaceous particles.

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22. The thermal management system of claim 21 wherein the carbonaceous particles have a particle size of less than 100 mesh.

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